

Rundle-Thiele, S., Schuster, L., Dietrich, T., Russell-Bennett, R., Drennan, J.,
Leo, C., & Connor, J. P. (2015). Maintaining or changing a drinking behavior?
GOKA's short-term outcomes. *Journal of Business Research*, 68(10), 2155-
2163. doi: <http://dx.doi.org/10.1016/j.jbusres.2015.03.015>

This article was funded by the Australian Research Council Linkage Program and
Queensland Catholic Education Commission (LP130100345) and Griffith University. The
funders played no role in study design, collection, analysis, interpretation of data, or in
the decision to submit the paper for publication. They accept no responsibility for
contents. The authors extend their thanks to the schools, staff, parents and students who
assisted this research project. Without their support, this research would not have been
possible.

Alcohol is one of the world's most widely consumed products, with individuals
drinking an average of 6.2 l of alcohol annually (Rehm et al., 2009). The
globalization and increasing sophistication of alcohol marketing, together with
the industrialization of alcohol production, have facilitated the spread and growth
of alcohol consumption along with the health and social problems associated
with its harmful use (Rehm et al., 2009; Szmigin, Bengry-Howell, Griffin, Hackely,
& Mistral, 2011). Harmful use of alcohol ranks among the top five risk factors for
disease and disability throughout the world (Lim et al., 2012) and results in 2.5
million deaths each year (World Health Organization [WHO], 2011). Binge
drinking contributes to a substantial portion of these alcohol-related deaths
(Chikritzhs, Jonas, Stockwell, Heale, & Dietze, 2001). Although operational
definitions vary, binge drinking involves consuming large amounts of alcohol in a

single session (Courtney & Polich, 2009). For example, US guidelines define binge drinking as four drinks for women and five drinks for men within 2 h (National Institute on Alcohol Abuse & Alcoholism [NIAAA], 2014) while in Australia high risk drinking refers to consuming more than four standard drinks on a single occasion (National Health & Medical Research Council [NHMRC], 2009).

Binge drinking is the most prevalent pattern of alcohol consumption among youth (Miller, Naimi, Brewer, & Jones, 2007). For instance, approximately 30% of 15-year-old and 44% of 17-year-old Australian adolescents (White & Hayman, 2006) and 22% of American high school adolescents (Eaton et al., 2012) binge drink. Nevertheless, binge drinking is not practiced by the majority of adolescents. Alcohol interventions should thus possess the dual aims of maintaining rejection of binge drinking behavior and changing this pattern of alcohol consumption where it exists in the adolescent population. The focus on behavior change in the field of social marketing has recently sparked theoretical debate, with scholars concerned that an over-focus on behavior change is limiting the field (Brennan & Parker, 2014). A lack of focus on the maintenance of positive behaviors that already exist will also constrain theoretical development. Typically social marketing alcohol interventions aim to change behavior, with little if any evidence in the literature of a balancing act between maintenance of key determinants, such as attitudes and subjective norms, that already inhibit harmful drinking and inducing change only for those determinants supporting the behavior.

Further, while the literature shows growing consensus regarding the association between alcohol marketing and subsequent alcohol consumption in young people (see Hastings, Anderson, Cooke, & Gordon, 2005; Smith & Foxcroft, 2009) and adolescents specifically (Jones & Magee, 2011), relatively less is known about the extent to which social marketing can be used in reducing harmful alcohol consumption and/or maintaining rejection of this behavior in this target group. This gap in the literature is partly attributable to a lack of randomized controlled studies (Janssen, Mathijssen, van Bon-Martens, Van Oers, & Garretsen, 2013). Social marketing research highlights the importance of alcohol programs for young people that extend beyond information-only campaigns and further suggests that fear, guilt or shame appeals should be replaced with more constructive approaches (Brennan & Binney, 2010; Szmigin et al., 2011). Educational entertainment, or edutainment, may constitute one such approach.

Edutainment seeks to engage and influence the target group through entertainment such as games, music and websites (Evans, 2008). In particular, edutainment provides an opportunity to inform and change young people's health and social behaviors while countering the pervasive effects of commercial media and marketing (Atkinson, Sumnall, & Measham, 2011; Evans, 2008; Huhman, 2008; Macario et al., 2013). A pilot social marketing program, which incorporated three modules of online games and three modules of offline activities, significantly moderated adolescents' attitudes towards drinking (Rundle-Thiele, Leo, Russell-Bennett, & Dietrich, 2013). This paper

presents the short-term outcomes of part of a full scale cluster randomized control trial evaluating the social marketing program called Game On: Know Alcohol (GOKA).

The present research makes four key contributions to the literature. First, the findings elicit the role of subjective norms and attitudes in influencing adolescent binge drinking intentions, in particular, the extent to which there is need for change or maintenance of these determinants. Thus, this research adds to the growing theoretical debate in the field of social marketing regarding behavior change or behavior maintenance. Second, the findings contribute to the current understanding of social marketing's capacity to reduce drivers of adolescent binge drinking. Third, this research addresses the call for randomized controlled studies of social marketing interventions (Janssen et al., 2013). Fourth and finally, the research provides further insight regarding the use of edutainment rather than information/knowledge approaches to reach young people for the purpose of behavior change or maintenance.

2. Targeting harmful patterns of alcohol consumption in adolescents using social marketing

For some young people, intoxication is not only considered normal (Fry, 2010), but also often celebrated with drunken stories worn as a badge of honor (Kubacki, Siemieniako, & Rundle-Thiele, 2011). These young people view alcohol

as an essential pleasure commodity (Fry, 2011) and binge drinking as a recreational activity (Jones, Barrie, & Berry, 2012). Consistent with the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975), it is likely that these norms and attitudes towards excessive alcohol consumption are contributing to the binge drinking rates in adolescents and young people world-wide (WHO, 2011).

Extant literature supports the utility and effectiveness of social marketing programs targeting alcohol-related norms, attitudes and behaviors, including young adults' harmful consumption of alcohol (e.g., Jones & Rossiter, 2002) in university settings (e.g., Deshpande & Rundle-Thiele, 2011; Glassman, Dodd, Miller, & Braun, 2010; Glider, Midyett, Mills-Novoa, Johannessen, & Collins, 2001; Thompson, Heley, Oster-Aaland, Stastny, & Crawford, 2013), drunk driving (e.g., Rothschild, Mastin, & Miller, 2006), alcohol consumption by pregnant women (e.g., Deshpande et al., 2006) and the supply of alcohol to adolescents by adults (e.g., Kypri, Dean, Kirby, Harris, & Kake, 2005). A systematic review shows eight from 13 programs employing social marketing principles reduced alcohol use in the short-term (Stead, Gordon, Angus, & McDermott, 2007). This evidence base suggests that social marketing may be useful in targeting adolescent binge drinking norms, attitudes and behaviors. However, it remains unclear whether social marketing can maintain any existing positive attitudes or subjective norms deterring binge drinking.

School settings offer an ideal setting to investigate adolescent drinking by providing efficient access to a large number of adolescents (Lemstra et al., 2010). Further, a recent review shows that a small range of psychosocial school-based programs successfully reduced alcohol use in youth (see Foxcroft & Tsertsvadze, 2012). The interactive SHAHRP program, for instance, achieved positive changes in adolescents' alcohol knowledge, attitudes towards safer drinking and drinking behavior through a series of skillbased activities (McBride, Farrington, Midford, Meuleners, & Phillips, 2004). Building on theoretically robust, interactive school-based programs, social marketing may provide an opportunity to further engage adolescents to maintain non-drinking and moderate drinking and reduce binge drinking (see Rundle-Thiele et al., 2013; Slater et al., 2006). For example, the 'Be Under Your Own Influence' program, an in-school communication campaign based on social marketing principles, reduced alcohol use among younger adolescents (Slater et al., 2006).

Social marketing research suggests that edutainment, which seeks to influence the target group through entertainment such as games, music, blogs and websites, may provide an effective means to engage adolescents, tweens and children (see Atkinson et al., 2011; Evans, 2008; Huhman, 2008; Macario et al., 2013). As an example, the VERB campaign successfully increased levels of physical activity by engaging tweens in exchanging the amount of physical activity they recorded for tricks/moves for their ViRTs or virtual sidekicks (Huhman, 2008). More broadly, another social marketing program employing interactive games improved selfefficacy towards increasing fruit and vegetable

intake (Buller et al., 2009). These results are consistent with education literature, which considers interactivity a key factor contributing to alcohol program effectiveness (see Soole, Mazerolle, & Rombouts, 2008; Tobler et al., 2000).

Edutainment through online games and other online teaching resources offers an opportunity to move beyond an informationonly approach to influencing behavior. However, few studies have examined the impact of educational games on alcohol drinking subjective norms, attitudes and behavior, although there is growing evidence of their capacity to increase alcohol-related knowledge (Rodriguez, Teesson, & Newton, 2014). Additional research, employing control groups, is necessary to advance this domain (Rodriguez et al., 2014). The social marketing program evaluated in this research represents a step towards addressing these gaps in current understanding. Consequently, this study advances evidence for use of a social marketing approach, specifically one employing edutainment, to effect change in the drivers and maintain the inhibitors of adolescent binge drinking.

3. Game On: Know Alcohol

The literature criticizes social marketing programs for failing to embed theory (Luca & Suggs, 2013; Truong, 2014). Theory use increases the effectiveness of programs encouraging healthy behavior (Gordon, McDermott, Stead, & Angus, 2006). Further, the likelihood of program success increases with the number of

social marketing benchmark criteria applied (Carins & Rundle-Thiele, 2014). Consistent with the approach undertaken in the pilot study, GOKA draws upon the Theory of Reasoned Action (Fishbein & Ajzen, 1975), the Do–Learn–Feel learning hierarchy (Ray, 1973) and experiential learning theory (Kolb & Kolb, 2005), as well as the National Social Marketing Centre (NSMC) (2006) benchmark criteria. The program aims to change the drivers of positive binge drinking intentions and maintain the factors inhibiting binge drinking intentions. GOKA includes six modules alternating between online edutainment games and practical activities such as wearing beer goggles, pouring a standard drink and lying in the gutter (see <http://gameon.rcs.griffith.edu.au/>). This modular design is advantageous given teachers selectively use program components (Roche et al., 2010). Two online edutainment games were developed purposefully for GOKA, Perfect Pour and Dumb Driver. The aim in Perfect Pour is to virtually pour exactly one standard drink of six alcohol beverages differing in alcohol content and glass size. Dumb Driver is a driving game that simulates loss of control as blood alcohol concentration rises.

4. Method

4.1. Research design

The simple cluster randomized controlled trial allocated 40 schools to either a program ($n = 20$) or control group ($n = 20$) from a total population of 92

Catholic education schools in Queensland, Australia. Random allocation was undertaken using SPSS and occurred prior to commencing contact with schools. A total of 40 schools were approached. Fourteen program schools and 10 control schools were recruited into the study. The results presented in this paper represent the schools where data had been collected at the time of writing: seven program schools and five control schools. The program was delivered in a one (full) day format by two to three members of the research team with teacher support. Program delivery typically occurred in an auditorium and outdoor settings, with all students in the target year level (Year 10) encouraged to participate in GOKA as part of their pastoral care or health and physical education program. The short-term evaluation employed a repeated measures research design where students in program schools were surveyed with researchers present at two time points: (1) prior to their participation in GOKA and (2) immediately after program delivery. Ideally, data collection timing would match perfectly in both program and control schools. However, in practice, it was difficult to achieve this aim. The five control schools were granted a two week completion timeline so that control schools could fit the two surveys into their timetables. Researchers were not always present during data collection in control schools.

4.2. Data collection and measures

Data were collected from program schools using an online survey through the dedicated project website (<http://gameon.rcs.griffith.edu.au/>). Control schools received an alternate link to the online survey to avoid exposure to GOKA. The survey employed validated scales to measure adolescents' alcohol knowledge, attitudes towards binge drinking, perceptions of social norms and intention to engage in binge drinking. The attitude items were adapted from previous research (Fishbein & Ajzen, 2010; Norman & Conner, 2006; Ravis & Sheeran, 2013) and included five items on a seven-point bi-polar semantic differential scale with -3 and $+3$ indicating a strongly negative or positive attitude towards binge drinking respectively. The subjective norm items were also adapted from previous research (Fishbein & Ajzen, 2010; Norman & Conner, 2006) and included four items on a seven point unipolar scale. The three items measuring behavioral intention were sourced from Fishbein and Ajzen (2010) and Norman and Conner (2006). They were operationalized on a seven-point unipolar scale, where 1 indicated highly negative intentions to binge drink and 7 indicated highly positive intentions to binge drink within the next two weeks. Knowledge measurement followed the approach employed by Rundle-Thiele, Ball, and Gillespie (2008). The ten knowledge questions were evaluated using a score point system where each correct answer was allocated a point to give a total out of 10. Finally, demographics and behavioral data on alcohol consumption were collected at baseline.

4.3. Sample

A total of 942 responses from program schools and 578 responses from control schools were collected at baseline from adolescents aged 14–16 years attending Year 10. Retention rates from baseline to immediate follow-up measurement were 74% in program schools and 46% in control schools. Lower retention rates reported for the control schools reflect that immediate follow-up data was yet to be collected in two out of five control schools at the time of writing. Retention rates reveal difficulties in matching codes, with proportionately more problems experienced in code matching in control schools where researchers were not always present to administer the surveys. Table 1 summarizes the self-reported characteristics of both program and control groups.

No significant difference is evident between the program and control group samples in terms of gender composition, $\chi^2 (1, n = 1361) = 3.795, p = .051$. Males (54.9%) were slightly over-represented in the overall sample. A significant, but small, difference was identified in the average age of respondents between the program ($M = 14.6, SD = .6$) and control ($M = 14.4, SD = .5$) groups, $t (1255) = 5.700, p < .001$. In contrast, there was no difference between program and control groups in terms of the self-reported academic achievement level of respondents, $\chi^2 (4, n = 1361) = .513, p = .972$. The majority of respondents (51.2%) reported that they achieve mostly B level grades. Last, no significant difference between the program and control school groups was identified in terms of the self-reported frequency of alcohol drinking behavior, $\chi^2 (4, n = 1445) = 2.356, p = .671$, and binge drinking, $\chi^2 (4, n = 1445) = 1.908, p = .753$.

4.4. Data analysis

The two-stage structural equation modeling approach proposed by Anderson and Gerbing (1988) was employed. Scale reliability and validity were first examined using confirmatory factor analysis in AMOS 21. Following this, a structural model was estimated using the Maximum Likelihood Bootstrap method to examine the determinants of adolescents' intentions to binge drink. Following this, repeated measure ANOVA was conducted to identify changes between pre and post measurements and differences between the program and control groups (Hotellings T).

5. Results

5.1. Validity and reliability of measures

A measurement model comprising 12 observed variables reflecting four factors (affective attitude, instrumental attitude, subjective norms and intention towards binge drinking) was estimated using pre($n = 1447$) and then post data ($n = 895$). For the measurement model estimated using the predata, while the χ^2 is significant [$\chi^2(48, n = 1447) = 251.236$, Bollen–Stine $p < .05$], the factors

demonstrated acceptable fit to the data across a range of fit indices: $\chi^2 / df = 5.234$; CFI = .986; TLI = .981; RMSEA = .054; and SRMR = .0219. A comparable result was obtained using the post data: $\chi^2 (48, n = 895) = 177.479$, Bollen–Stine $p > .05$, $\chi^2 / df = 3.697$; CFI = .989; TLI = .985; RMSEA = .055; and SRMR = .0168. If a majority of fit indices indicate an acceptable model, then the model is supported by the data (Schumacker & Lomax, 2010). The RMSEA is .054 and the 90% confidence intervals range between 0 and .08, indicating an acceptable fit (Browne & Cudeck, 1993). The SRMR is less than .05 (Kline, 2005), and the CFI and TLI both exceed .95 (Hu & Bentler, 1999), indicating good fit with the data.

Further, the standardized factor loadings were all significant and above .70 (Appendix A) (Kline, 2005). The observed variables' squared multiple correlations (R^2) all exceeded .50 (Appendix A) (Kline, 2005). Tables 2 and 3 summarize the measurement models' reliability and validity information. All Cronbach's alpha coefficients exceeded .70 (Nunnally & Bernstein, 1994). This indicates that the items reflecting the factors are internally consistent.

Convergent validity was established since the composite reliabilities for each construct exceeded the recommended threshold of .70 and the average variance extracted (AVE) for each construct exceeded .50 (Hair, Black, Babin, & Anderson, 2010). Discriminant validity was assessed using the procedure of Fornell and Larcker (1981). Since the squared correlation between each pair of constructs

was less than the corresponding AVEs, this provides evidence of discriminant validity.

5.2. Baseline binge drinking knowledge, perceptions, behaviors and future intentions

Importantly, this sample comprised a predominantly nondrinking cohort. The data show that approximately 68% of adolescents reported that they had never tried drinking alcohol. The majority (82.3%) of the sample had also not previously engaged in binge drinking, indicating that only 17.7% of the adolescents reported participating in this pattern of alcohol consumption. This rate is lower than described in previous studies (see Eaton et al., 2012; White & Hayman, 2006), but consistent with the global trend of a reduction in alcohol drinking among adolescents in Australia (Livingstone, 2014).

At baseline, adolescents from both program and control schools possessed relatively low levels of alcohol knowledge, answering only five from ten questions correctly on average. Further, this cohort reported low levels of social support for binge drinking from important others and held a negative instrumental attitude towards binge drinking, indicating that they considered binge drinking on average to be bad, foolish or harmful. On the other hand, the adolescents surveyed exhibited a more moderate affective attitude towards binge drinking. This suggests that while some individuals viewed binge drinking as unpleasurable or unenjoyable, others perceived this behavior to be

pleasurable or enjoyable. Last, adolescents in this study did not hold a strong intention to engage in binge drinking.

Independent samples t-tests were undertaken to examine group (program versus control) differences at baseline. The t-tests indicated no significant differences between the program and control school groups in terms of their average alcohol knowledge score at baseline. Furthermore, no significant difference was detected between the groups at baseline for subjective norms surrounding binge drinking, instrumental and affective attitude towards binge drinking, and the intention to binge drink.

5.3. Determinants of binge drinking future intentions

To understand the relative impact of knowledge, attitudes and subjective norms on binge drinking intentions, a structural model was estimated using the predata ($n = 1447$). While the χ^2 is significant [$\chi^2 (56, n = 1447) = 258.093$, Bollen–Stine $p < .05$], the model demonstrated acceptable fit to the data across a range of fit indices: $\chi^2 / df = 4.609$; CFI = .986; TLI = .981; RMSEA = .050; and SRMR = .0207. The results showed that knowledge does not have a direct effect on intentions ($B = .011$, $p = .612$); however, it is significantly associated with the TRA determinants of affective ($B = -.220$, $p < .05$) and instrumental attitude ($B = -.276$, $p < .05$), as well as subjective norms ($B = -.204$, $p < .05$), when modeled using linear regression.

This indicates that knowledge may indirectly influence intentions to binge drink through these factors. The TRA determinants explained more than 50% of the variance in intentions ($r^2 = .583$). Subjective norms had the strongest impact on intentions ($B = .575$, $p < .05$), followed by affective attitudes ($B = .151$, $p < .05$) and instrumental attitudes ($B = .146$, $p < .05$).

5.4. Program outcomes

The overarching aim of GOKA is to change the drivers of positive binge drinking intentions and maintain the factors inhibiting positive binge drinking intentions. Given subjective norms and instrumental attitudes were already unsupportive of binge drinking in the sample, it is important that no change occurs in these variables as a result of the GOKA program. This is particularly the case for subjective norms, owing to its significant impact on intentions to binge drink. In contrast, GOKA should change the low levels of knowledge and moderate the affective attitudes held by adolescents participating in the program.

To investigate the effects of the GOKA program, a repeated measures ANOVA was undertaken to assess change over time for both program and control groups (Table 4). The results are displayed graphically in Appendix B. Knowledge relating to alcohol changed over time (Hotelling's $T^2 = 0.101$, $F = 73.84$, $p < 0.001$). Alcohol-related knowledge was higher in the program group when

compared to the control group following participation in GOKA (Hotelling's $T^2 = 0.141$, $F = 103.54$, $p < 0.001$). Affective attitude also changed (Hotelling's $T^2 = 0.031$, $F = 22.61$, $p < 0.001$). Affective attitude was more negative towards binge drinking in the program group (e.g., binge drinking is less pleasurable) when compared to the control group (Hotelling's $T^2 = 0.005$, $F = 3.63$, $p < 0.05$). Instrumental attitude changed in the undesired direction in the control group while instrumental attitudes did not change for the program group (Hotelling's $T^2 = 0.008$, $F = 6.06$, $p = 0.01$). No changes were observed for social norms and behavioral intentions over time and no group differences were observed.

6. Discussion

Social marketers need to be mindful that change does not always equate to success and for some behaviors, maintenance is an equally important program outcome. In particular, this research shows the importance of not over-stating the incidence of adolescent binge drinking and the need to establish a baseline for a specific target group prior to developing intervention strategies. While population health data is vital for government policy as a means to identify trends, the need to precisely identify the incidence rates in the target group is highlighted by this study. Instrumental attitudes and subjective norms were not supportive of binge drinking in the target group of the present research, corresponding to low intentions to binge drink and actual binge drinking behavior in contrast to population drinking statistics. The program goal was therefore to

maintain these levels rather than elicit a change. In contrast, alcohol knowledge and affective attitude were moderate, warranting change.

GOKA achieved both maintenance and change goals. While maintaining adolescents' desirable instrumental attitudes and perceptions of subjective norms, GOKA significantly improved adolescents' alcohol-related knowledge and created a negative shift in affective attitude towards binge drinking. This means that adolescents perceived binge drinking to be less pleasurable and enjoyable after participating in GOKA. This is likely to be important in changing young people's view of alcohol as a pleasure commodity (Fry, 2011) and binge drinking as a recreational activity (Jones et al., 2012).

The present research also highlights the importance of subjective norms relative to attitudes in influencing intentions to binge drink in adolescents, providing insight into the theoretical underpinnings of future interventions. Subjective norms represent the social rules and sanctions that govern the drinking attitudes and behaviors of adolescents and can serve as a behavioral driver or inhibitor. Social theories such as social cognitive theory and/or reinforcement theories could be used in future program development for GOKA and similar programs to ensure that subjective norms that are unsupportive of binge drinking are maintained or if subjective norms are supportive of binge drinking, that they are changed.

Last, the study provides further empirical support for edutainment as a potentially valuable social marketing tool to inform and influence behavior in young people. The lack of any direct impact of knowledge on intentions to binge drink indicates that an information-only intervention may not be as effective. GOKA employed three edutainment online games, as well as an interactive quiz and website, in addition to offline activities. Although the effects of the edutainment games are yet to be independently assessed, GOKA as a whole significantly improved alcohol knowledge and changed adolescents' affective attitude towards alcohol. This builds on current evidence supporting the utility of edutainment games, particularly in regard to their capacity to increase content knowledge of alcohol (Rodriguez et al., 2014). This suggests concern that activities designed to engage students through fun miss the point (Roche et al., 2010) may be unfounded.

6.1. Implications

The current study provides empirical evidence of social marketing's capacity to influence adolescents' binge drinking by changing drivers and maintaining inhibitors of this behavior. Younger adolescents have received relatively limited attention to date (i.e., Rundle-Thiele et al., 2013; Slater et al., 2006) compared to social marketing efforts targeting young adults' binge drinking in university settings (e.g., Deshpande & Rundle-Thiele, 2011; Glassman et al., 2010; Glider et al., 2001; Thompson et al., 2013). The study employed a randomized control

trial design as called for by Janssen et al. (2013) given only few randomized control design studies of social marketing programs seeking to minimize alcohol harm are evident in the literature (an exception is Kypri et al., 2005). The immediate follow-up results of the cluster randomized control trial demonstrate that alcohol-related knowledge increased and affective attitudes towards binge drinking became more negative following participation in GOKA compared to a control group. In so doing, the study also contributes further evidence supporting the utility of edutainment in social marketing efforts targeting young people (Atkinson et al., 2011; Evans, 2008; Huhman, 2008; Macario et al., 2013). Overall, the present research provides an important basis for future research.

Practically, this research provides insights for social marketers aiming to develop innovative and effective approaches to reduce binge drinking in adolescence as called for by the alcohol literature (Degenhardt et al., 2013; Miller et al., 2007). In particular, the principles employed by GOKA could be used to develop other schoolbased programs, which are known to be more cost and time effective than community programs (McBride et al., 2004). From 2015, GOKA components will be publicly available and incorporated into Queensland's state alcohol and drug education curriculum for Year 10 students of approximately 183 schools. This provides an additional resource for targeting binge drinking in school settings, which is important given evidence that program efforts repeated over time are effective in the longer term (Komro et al., 2001; McBride et al., 2004).

6.2. Limitations and future directions

The current study is limited to one region in Australia and the Catholic education student population of adolescents aged between 14 and 16 years old. The results should be considered in light of the sample and study setting. In particular, evidence of GOKA's capacity to influence key determinants of adolescent binge drinking in a wide variety of settings, including public schools, different religious denominations, different regions and different aged student cohorts is necessary. Furthermore, this study examined short-term, pre-to-post program outcomes. Longer term follow-up is therefore required, particularly to ascertain potential changes in binge drinking or maintenance of the rejection of this behavior.

Future research and program development that builds on GOKA is also recommended. The social marketing literature suggests that application of the principle of market segmentation may be one avenue for improving program effectiveness given studies show that not only do distinct segments exist within target groups, but they have differential responses to social marketing programs (Gray & Bean, 2011; Walsh, Hassan, Shiu, Andrews, & Hastings, 2010). Segmentation permits the selection of segments within the target group for which tailored programs aligned with their needs and wants can be delivered to achieve program outcomes more efficiently and effectively (Andreasen, 2002). Separate programs targeting adolescent segments that do and do not engage in binge drinking may be one alternative for this type of approach. An additional avenue for future development of GOKA and similar social marketing programs is a stronger focus on influencing social norms

surrounding adolescent binge drinking. Influencing social norms, in addition to attitudes, may increase the likelihood of achieving change in positive behavioral intentions to binge drink in accordance with the TRA and the results of this research.

7. Conclusion

The current study indicates that participation in GOKA, a social marketing program, can change knowledge and attitudes towards binge drinking for the better, and maintain factors such as subjective norms already inhibiting binge drinking in adolescents. Any positive outcomes from a one-off program represent an important step (Donovan, 2011), especially given share of voice for anticonsumption messages is significantly outweighed by messages positively promoting alcohol (Hastings & Angus, 2011). This research therefore provides direction for future inquiry into addressing alcohol drinking in adolescents.

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